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SAFETY INVOLVEMENT IN ENVIRONMENTAL MANAGEMENT

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J.L. Zeller, Jr.

December 30, 1991

Contract No. DAAJ09-88-D-A002

Prepared for:

**U.S. Army Safety Center
Fort Rucker, Alabama**



**COBRO Corporation
Daleville, Alabama 36322**

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INTRODUCTION

Within the Army, increasing concern and resources are being devoted to environmental issues. Many of the issues are the direct result of accident events. To this point, relatively little attention has been devoted to this kind of accident. The vast majority of environmental-related accidents is not reported in the data base. Since there is little accounting for these accidents, there is little focused prevention work taking place. As a result, the Army continues to have spills and other accidental damage to the environment. These incidents simply add to the billions of dollars in accumulated damage. The Army needs to develop procedures that assure the safety function is making the maximum possible contribution to the control of these events. The potential return on improved safety in the environmental protection area could easily amount to tens of millions of dollars per year.

The purpose of this study is to provide the Army an operational concept for a more effective intergration of the safety function into the Army's environmental management and protection programs.

METHOD

A detailed analysis of current Army environmental program policies, objectives, and procedures was conducted to divide the program into its component areas. Each component area was analyzed to identify its function and important environmental outputs (e.g., environmental impact statement, Resource Conservation and Recovery Act compliance, etc.). An extensive search of the Code of Federal Regulations (CFR) relating to the current Army environmental program component areas was conducted. During this search, special emphasis was given to the storage, handling, packaging, labeling, treatment, and disposal of hazardous waste or hazardous materials. Additionally, requirements relating to reporting, training, risk assessment, investigating, medical surveillance, and protective clothing and equipment were addressed.

A detailed review of five different portions of the CFR was included in the analysis of the Army environmental program. These portions included Titles 29, 32, 40, 46, and 49 (references (ref) 1, 2, 3, 4, 5, respectively). A complete review of the Army Regulations (ARs) pertaining to environmental protection and management was also conducted. These regulations included AR 200-1, AR 200-2, AR 420-47, and AR 420-76 (ref 6, 7, 8, 9, respectively).

An assessment of the Army Safety Program (AR 385-10 (ref 10)) was conducted to identify its goals, objectives, outputs, policies, and operating techniques. Army regulations dealing with the safety of personnel were reviewed to identify areas of potential support for the Army environmental programs. These regulations included AR 385-14, AR 385-16, AR 385-40, AR 385-55, AR 5-3, AR 40-5, and Department of the Army (DA) Pamphlet 385-1 (ref 11, 12, 13, 14, 15, 16, 17, respectively).

A structured interview format (appendix A) was developed to collect information about the Army's environmental programs from selected major Army commands (MACOM) and their installations. The interview included questions concerning existing actions each MACOM or installation is taking to address the environmental issues in their safety programs, actual environmental accidents and subsequent preventive actions taken to preclude their recurrence. The organizations interviewed were also questioned as to the environmental areas they considered to be key areas and suggested recommendations concerning development of an environmental program element within their safety organization. The interviews were telephonically administered to 30 Army organizations, representatives from the U.S. Air Force (USAF), and U.S. Navy (USN) Safety Centers, the Army Environmental Office, and a representative from the Occupational Safety and Health Administration (OSHA).

The data acquired through interviews and program reviews were analyzed to identify a refined listing of potential safety program applications for each environmental area. These applications were revised based on U.S. Army Safety Center (USASC) input, and a practical operational concept for integrating safety into the environmental program was developed. The draft operational concept was reviewed by the USASC and revised on the basis of their input. The revised operational concept (addendum (ref 18)) was prepared and provided to the USASC.

RESULTS

Program Review

Review of the Army environmental protection program identified 18 different program areas, each with its own objectives and procedures. These programs are contained in appendix B. Review of the Army regulations and CFRs relating to safety and the environment and assessment of the Army Safety Program identified 11 specific environmental programs requiring safety support. These programs are listed in Table 1. This support generally involves advising and assisting the organization(s) responsible for certain environmental programs by reviewing written procedures and requirements to ensure their adequacy, monitoring certain activities or functions to ensure regulatory compliance, providing training assistance to include developing and conducting required safety training, and investigating certain reported unsafe or unhealthful working conditions. Several of the environmental programs require more extensive safety support than others.

Table 1. Environmental Programs Requiring Safety Function Support

<u>Major Support</u>	<u>Minor Support</u>
Hazardous Waste Management (HM)	Hazardous Waste Minimization (HAZMIN)
Solid Waste Management (SW)	Noise Abatement
Hazardous Materials Management (HM)	Pesticides and Pest Management
Oil and Hazardous Substance Spill Contingency Planning and Emergency Response	Environmental Restoration
Asbestos Management	Air Pollution and Ozone Depletion
	Historic and Archaeological Resources

Note: Support for one program may be included in other programs (i.e., pesticides are considered a hazardous material and would be included in both the Hazardous Materials and Hazardous Waste Management Programs).

In providing the required safety support, the safety specialist performing the environmental safety program functions will be responsible for evaluating various environmental programs, plans, and procedures to ensure that they are in compliance with safety criteria in Army, State, and Federal regulations. The specific programs, plans, and procedures to be

evaluated will depend on the actual environmental programs being conducted. Additionally, the safety specialist will observe various functions and activities associated with the environmental programs to ensure that soldiers, DA civilians, and Army contractors are in compliance with the requirements stipulated in the plans and procedures. The safety specialist will also assist the organizations responsible for the various environmental programs in developing and conducting the specific safety training required by those programs and in investigating certain reported unsafe or unhealthful working conditions.

Interviews

Telephonic interviews were conducted with safety offices located at 30 different Army organizations including nine MACOMs, six installations, four schools, three depots, four engineer districts, two Military Traffic Management Command areas, one hospital and one Corps headquarters. Of the 30 offices surveyed, all respondents indicated they were staffed with full-time employees and 95 percent of the safety specialists were Civilians. In addition, 53 percent indicated that the safety specialists assigned to their office were consolidated and performed a variety of safety functions whereas 47 percent functionally assigned their safety specialists to specific safety duties.

The respondents indicated that the type of safety support requested by the organizations responsible for environmental programs generally involved some form of technical assistance such as investigations, risk assessment, hazardous communications training, inspections, or other general safety support. Over 90 percent of the respondents indicated that they provided assistance with safety-related training, monitoring for compliance, investigating, and evaluating and assessing environmental policies and procedures. The majority of the respondents indicated that they participated on local planning boards, committees, and conferences but usually only got involved with specification reviews after the plans had been finalized. Table 2 shows the various environmental programs and the percentage of respondents providing safety support to those programs.

Although 60 percent of the safety offices responding to the survey indicated that they should be providing more support to environmental issues, a majority of them (87 percent) indicated that they needed additional manpower in order to adequately support the environmental programs. Furthermore, 97 percent of the offices indicated a need for additional training for their safety specialists in environmental-related issues.

Several of the safety offices indicated that safety, environmental, industrial hygiene, and fire prevention should be

consolidated under a single loss control office with one manager in charge of all operations. They felt that this type of organization would result in better utilization of resources, less duplication of effort, reduced coordination requirements, and a clear-cut chain of command.

Table 2. Percent of Safety Offices Providing Support to Environmental Protection Programs

Environmental Program/Plan Protection	Percentage of Safety Offices Providing Support
Hazardous Materials Management	90
Hazardous Waste Management	93
Solid Waste Management	77
Oil and Hazardous Substance Spill Contingency Planning and Emergency Response	86
Asbestos Management	87
Hazardous Waste Minimization	70
Noise Abatement	87
Pesticides and Pest Management	63
Environmental Restoration	40
Air Pollution and Open Depletion	43
Historic and Archaeological Resources	27

Discussions with representatives from the Environmental Protection Agency (EPA) (Army Environmental Office) and OSHA revealed that they had seen a need for better working relationships between agencies in order to provide better services and protection. Guidelines were established in a memorandum of understanding (MOU) between these two agencies which gives the worker the right to convey information from one agency to the other without going through a normal chain of command. Although OSHA deals primarily with safety issues, environmental problems that affect both agencies are resolved using the guidelines in the MOU. A copy of this MOU is contained in reference 18.

Discussions with representatives from the USAF Safety Center revealed that safety and environmental organizations operate separately, but Air Force regulations establish joint councils with both organizations participating. Safety offices work with

the environmental engineering offices in an advisory and observation capacity and provide support as needed. The two organizations do notify each other of any substandard conditions which affect their area of responsibility.

Discussions with representatives from the USN Safety Center revealed that environmental responsibilities are more fragmented with the Naval Facilities Engineering Command responsible for environmental protection and the Naval Supply System Command responsible for hazardous materials management. The USN Safety Center acts as an advisor, data collector, and mishap analyst and only makes recommendations. On many ships, the industrial hygiene officer is responsible for safety-related environmental issues although aircraft carriers also have an aviation safety officer on board.

On the basis of these results, an operational concept for more effective integration of the safety function into the Army's environmental management and protection programs was developed. After incorporating suggestions from the USASC following their review, the concept was revised and is contained in the addendum to this report (ref 18).

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APPENDIX A

STRUCTURED INTERVIEW FORMAT

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PROPOSED TOPICS

1. Briefly describe the organizational structure of your safety staff.

Major Items:

- a. Are safety personnel civilian, military, or both (percentage of each)?
- b. Are they full-time or collateral duty safety personnel? Explain duties.
- c. Are different safety functions (e.g., explosives safety, vehicle safety, accident investigation) performed by separate personnel/specialists? Full-time or collateral safety personnel?
- d. How are military safety personnel identified (e.g., orders, skill identifiers)?

2. Describe your safety staff's working relationship with the personnel responsible for the environmental program.

Major Items:

- a. Is safety assistance/support requested by engineering or environmental representatives?
 - b. Explain the type of assistance/support requested.
 - c. Describe the safety staff's involvement in planning future operations/construction/expansion.
3. Describe your safety staff's support to the environmental programs.

Major Items:

- a. Is there one person in the safety office responsible for the environmental program?
- b. Who determines the proper safety equipment and clothing to be used in the environmental programs? Are these functions performed by your safety organization?
- c. Points of interest:
 1. Training
 2. Investigation
 3. Monitoring for compliance
 4. Risk Assessment
 5. Budgeting

d. Who does HAZWOPER (29CFR1910.120) training?

4. Does the safety support to the environmental programs create a problem for the safety staff? If so, Explain.

Major Items:

- a. Is there a need for additional training in the environmental area?
- b. Is there a need for additional personnel to cover the environmental areas?
- c. Are additional resources required? If yes, suggest resources (e.g., automation, data bases, etc.)
- 5. Should the safety staff give more support to the environmental programs?

Major Items:

- a. Describe the type of support you think safety should give to the environmental programs.
- b. Would the extra support require additional manpower? (Estimate how much and for what purposes.)
- c. Would the additional support require an increase in the safety budget?
- 6. Which environmental programs do you support? List any additional programs.
 - a. HW
 - b. SW
 - c. HM
 - d. Oil and hazardous substance spill contingency planning and emergency response plan
 - e. Asbestos management plan
 - f. HAZMIN
 - g. Noise abatement
 - h. Pesticides and pest management
 - i. Environmental restoration
 - j. Air pollution and ozone depletion plans
 - k. Historic and archaeological resources
 - l. Other (specify)

NOTE: Ask questions only about specific programs they support.

7. Describe how environmental issues are handled within your safety program.

Major Items:

- a. Environmental mishaps within the command
- b. Corrective actions to reduce or prevent similar mishaps
- c. Environmental areas considered to be key safety areas
- d. HM/HW tracking to include transport, storage, and use

8. Explain the benefits and liabilities of safety support to the environmental programs.

Major Items:

- a. What would change?
- b. What are the major problem areas?
- c. How would you correct the problems?

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HAZARDOUS WASTE MANAGEMENT PROGRAM

1. Describe your (safety staff/office) involvement in the Hazardous Waste Management Program.
2. Explain the safety support and training given to the Hazardous Waste Management Program.
3. Are you (safety staff/office) a member of the Hazardous Waste Management Board?
4. Are you (safety staff/office) involved in the establishment of the safety responsibilities and procedures associated with hazardous waste?
5. Are you (safety staff/office) involved in the installation budgeting process?

Points of Interest:

1. Assist supervisors in developing training?
2. Monitor training requirements?
3. Assist in safety training?
4. Serve as a member of the Hazardous Waste Board?
5. Monitor the storage, packaging, transporting, treatment, and disposal?
6. Perform risk assessments to determine best management practices?
7. Investigate employee reports of hazards?
8. Review abatement plans?
9. Provide input to the budgeting process?

SOLID WASTE MANAGEMENT PROGRAM

1. Describe your (safety staff/office) involvement in the Solid Waste Management Program?
2. Do you (safety staff/office) provide safety training for the Solid Waste Management Program?
3. Are the operating procedures for the collection system reviewed by safety?

Points of Interest:

1. Assist supervisors in developing training?
2. Monitor training requirements?
3. Assist in conducting safety training?
4. Monitor the storage, packaging, transporting, treatment, and disposal?
5. Perform risk assessments to determine best management practices?
6. Investigate employee reports of hazards?
7. Review abatement plans?
8. Provide input to the budgeting process?

HAZARDOUS MATERIALS MANAGEMENT (HM) PROGRAM

1. Describe your (safety staff/office) involvement in the Hazardous Materials Management Program.
2. Do you (safety staff/office) provide safety training for the Hazardous Materials Management Program?
3. Explain safety's role in the Emergency Release Contingency Plan.
4. Does safety evaluate the Emergency Release Contingency Plan for training, personal protective equipment, and other emergency response requirements?

Points of Interest:

1. Assist supervisors in developing training?
2. Monitor training requirements?
3. Assist in safety training?
4. Monitor the storage, packaging, transporting, treatment, and disposal?
5. Perform risk assessments to determine best management practices?
6. Investigate employee reports of hazards?
7. Review abatement plans?
8. Provide input to the budgeting process?

OIL AND HAZARDOUS SUBSTANCE SPILL CONTINGENCY PLANNING
AND EMERGENCY RESPONSE PLAN

1. Describe your (safety staff/office) involvement in the oil and Hazardous Substance Spill Contingency Planning and Emergency Response Plan.
2. Describe safety's role in the Oil and Hazardous Substance Spill Contingency Planning and Emergency Response Plan.
3. Describe the safety training provided for the Oil and Hazardous Substance Spill Contingency Planning and Emergency Response Plan.
4. Do you (safety staff/office) evaluate the Oil and Hazardous Substance Spill Contingency Planning and Emergency Response Plan for training, personal protective equipment, and other emergency response requirements?
5. Describe your (safety staff/office) role in the inventories of oils and hazardous materials. (Ensure they are developed and maintained.)

Points of Interest:

1. Assist supervisors in developing training?
2. Monitor training requirements?
3. Assist in safety training?
4. Monitor the storage, packaging, transporting, treatment, and disposal?
5. Perform risk assessments to determine best management practices?
6. Investigate employee reports of hazards?
7. Review abatement plans?
8. Provide input to the budgeting process?

ASBESTOS MANAGEMENT PLAN

1. Explain safety's support/involvement in the Asbestos Management Program.
2. Describe safety training for the Asbestos Management Program.
3. Does the safety staff perform risk assessments to determine removal priorities?

Points of Interest:

1. Assist supervisors in developing training?
2. Monitor training requirements?
3. Assist in safety training?
4. Monitor the storage, packaging, transporting, treatment, and disposal?
5. Perform risk assessments to determine best management practices?
6. Investigate employee reports of hazards?
7. Preview abatement plans?
8. Provide input to the budgeting process?

HAZARDOUS WASTE MINIMIZATION (HAZMIN) PROGRAM

1. Describe your (safety staff/office) involvement in the (HAZMIN) Program.
2. Describe the safety training provided for the HAZMIN Program.
3. Explain the safety office's involvement with the employee awareness and suggestion program.
4. Explain your (safety staff/office) role in chemical identification and hazardous waste inventories. (Ensure compliance.)

Points of Interest:

1. Assist supervisors in developing training?
2. Monitor training requirements?
3. Assist in safety training?
4. Monitor the storage, packaging, transporting, treatment, and disposal?
5. Perform risk assessments to determine best management practices?
6. Investigate employee reports of hazards?
7. Preview abatement plans?
8. Provide input to the budgeting process?

NOISE ABATEMENT PROGRAM

1. Describe your (safety staff/office) involvement in the Noise Abatement Program.
2. Explain the safety training provided to the Noise Abatement Program.
3. Do you (safety staff/office) investigate and remediate noise complaints.

Points of Interest:

1. Assist supervisors in developing training?
2. Monitor training requirements?
3. Assist in safety training?
4. Perform risk assessments to determine best management practices?
5. Investigate employee reports of hazards?
6. Review abatement plans?
7. Provide input to the budgeting process?

PESTICIDES AND PEST MANAGEMENT PROGRAM

1. Explain your (safety staff/office) involvement in the Pesticides and Pest Management Program.
2. Explain the safety training provided to the Pesticides and Pest Management Program.
3. Do you (safety staff/office) perform risk assessments to identify the most potential damage of resources?
4. Does the safety staff evaluate the protective equipment needs of the pesticides applicators?

Points of Interest:

1. Assist supervisors in developing training?
2. Monitor training requirements?
3. Assist in safety training?
4. Perform risk assessments to determine best management practices?
5. Investigate employee reports of hazards?
6. Review abatement plans?
7. Provide input to the budgeting process?

ENVIRONMENTAL RESTORATION PROGRAM

1. Explain your (safety staff/office) involvement in the Environmental Restoration Program.
2. Does the safety office perform preliminary assessments/site inspections to determine the best management practices?
3. Explain the safety office's input to the budgeting process.

AIR POLLUTION AND OZONE DEPLETION PLAN

1. Explain your (safety staff/office) involvement in the Air Pollution and Ozone Depletion Plan.
2. Are new facility construction plans reviewed by the safety office?
3. Are all new plans reviewed to ensure safety considerations?

HISTORIC AND ARCHAEOLOGICAL RESOURCES PROGRAM

1. Explain your (safety office/staff) involvement in the Historic and Archaeological Resources Program.
2. Do you provide technical and professional assistance to eliminate or control an unsafe environment?
3. Does the safety office ensure that the historic and archaeological sites are safe for workers and visitors?

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TOPICS FOR THE OTHER SERVICES

1. Briefly describe the organizational structure of safety in your service.
 - a. Are safety personnel civilian or military?
 - b. Are they full-time or collateral duty safety personnel?
 - c. Give some examples of collateral safety duty.
 - d. Will a person be assigned only one type task/function (e.g. range safety, water safety, motor vehicle safety)?
 - e. How are military safety personnel identified (e.g., orders, skill identifiers)?
2. Who has the major responsibilities for the environmental programs in your service?
 - a. Under what command?
 - b. How are the programs enforced?
 - c. Explain the linking of safety and environmental programs in the organizational structure.
3. Describe your safety staff's support to the environmental programs within your service.
 - a. What programs are supported?
 - b. Which programs receive the most emphasis from safety?
4. Explain the safety staff's working relationship with the environmental staff.
 - a. How are safety related environmental problems resolved?
 - b. Are they addressed as safety or environmental problems?
 - c. Which staff will have responsibility for an environmental violation which is safety related?
5. Explain your safety staff's involvement in the planning of future operations/construction/expansion.

EPA/OSHA TOPICS

1. Explain EPA/OSHA relationship.
 - a. How are problems that affect both agencies handled?
 - b. How are their policies integrated?
 - c. Does one agency have precedence over the other?
 - d. What are the methods of enforcement?
2. Are there many conflicts between EPA and OSHA?
 - a. What do these conflicts encompass (e.g. enforcement, policy)?
 - b. How are these conflicts resolved?
3. Who enforces safety requirements in the EPA programs?

APPENDIX B

ARMY ENVIRONMENTAL PROTECTION PROGRAMS

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1. Solid Waste Management
2. Hazardous Waste Management
3. Asbestos Management
4. Water Resource Management
5. Air Pollution and Ozone Depletion
6. Hazardous Material Management
7. Noise Abatement
8. Oil and Hazardous Substance Spill Contingency Planning and
Emergency Response
9. Environmental Restoration
10. Radon Reduction
11. Real Property Transactions
12. Underground Storage Tanks
13. Hazardous Waste Minimization
14. Research and Development
15. Pesticides and Pest Management
16. Fish and Wildlife Management
17. Forest Management
18. Historic and Archaeological Resources

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APPENDIX C

REFERENCES

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1. Code of Federal Regulations Title 29 Labor
2. Code of Federal Regulations Title 32 National Defense
3. Code of Federal Regulations Title 40 Protection of the Environment
4. Code of Federal Regulations Title 46 Shipping
5. Code of Federal regulations Title 49 Transportation

6. AR 200-1 Environmental Protection and Enhancement 23 April 1990
7. AR 200-2 Environmental Effects of Army Actions 23 December 1990
8. AR 420-47 Solid and Hazardous Waste Management 22 June 1987
9. AR 420-76 Pest Management 3 June 1986
10. AR 385-10 The Army Safety Program 23 May 1988
11. AR 385-14 Transporting Accident Prevention and Emergency Response Involving Conventional Munitions and Explosives 8 April 1991
12. AR 385-16 System Safety Engineering and Management 3 May 1990
13. AR 385-40 Accident Training and Records 1 April 1987
14. AR 385-55 Prevention of Motor Vehicle Accidents 12 March 1987
15. AR 5-3 Installation Management and Organization 10 November 1986
16. AR 40-5 Preventive Medicine 15 October 1990
17. DA PAM 385-1 Unit Safety Management 15 March 1973

18. See additional references in addendum to this report
 Operational Concept for Safety Development
 in Environmental Management December 1991

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APPENDIX D

GLOSSARY

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Appendix D GLOSSARY

AR	ARMY REGULATIONS
CFR	CODE OF FEDERAL REGULATIONS
DA	DEPARTMENT OF THE ARMY
EPA	ENVIRONMENTAL PROTECTION AGENCY
HAZMIN	HAZARDOUS WASTE MINIMIZATION
HM	HAZARDOUS MATERIALS MANAGEMENT
HW	HAZARDOUS WASTE MANAGEMENT
MACOM	MAJOR ARMY COMMAND
MOU	MEMORANDUM OF UNDERSTANDING
OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
REF	REFERENCE(S)
SW	SOLID WASTE
USAF	UNITED STATES AIR FORCE
USASC	U.S. ARMY SAFETY CENTER
USN	UNITED STATES NAVY

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ADDENDUM

**OPERATIONAL CONCEPT FOR SAFETY
INVOLVEMENT IN ENVIRONMENTAL
MANAGEMENT**

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December 30, 1991

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PURPOSE

To provide the Army an operational concept for the more effective integration of the safety function into the Army's environmental management and protection programs.

GENERAL

Within the Army, increasing concern and resources are being devoted to environmental issues. Many of the issues are the direct result of accident events. To date, relatively little attention has been devoted to this kind of accident. The vast majority is not reported in the data base. Since there is little accounting for these accidents, there is little focused prevention work taking place. As a result, the Army continues to have spills and other accidental damage to the environment. These accidents add to the billions of dollars in accumulated damage. The Army needs procedures that assure the safety function is making maximum possible contribution to control of these events. The potential return on improved safety in the environmental protection area could easily amount to tens of millions of dollars per year.

The Army's environmental protection program is governed by the Code of Federal Regulations (CFR) pertaining to the protection of the environment (40 CFRs) and Army Regulation (AR) 200-1, Environmental Protection and Enhancement. These directives prescribe policies and procedures to integrate environmental considerations into all activities, allocate resources and training to protect the environment, ensure installation operations are environmentally acceptable, minimize the generation of waste, and clean up sites of past contamination. Although AR 200-1 is the capstone regulation for the Army, the CFR and various state regulations have precedence over it and the other Army regulations pertaining to this program. When standards in Army publications conflict with a legal standard or provide a lower degree of protection, the legal standard applies. When the Army standard is equal to, or exceeds, such requirements, the Army standard applies. There are 18 identified programs (component areas) within the overall environmental program, each with its own objectives and procedures. These programs are listed in appendix A. The proponent for the overall program within the Army is the Office of the Chief of Engineers.

The Army's safety program is governed by AR 385-10, the Army Safety Program. This directive prescribes policies and procedures to protect and preserve Army personnel and property against accidental loss. It also provides for public safety incident to Army operations and activities and safe and healthful work places, procedures, and equipment. In addition to the capstone regulation, there are a number of 385-series regulations and pamphlets which provide guidance to commanders. The proponent for the program is

the Director of Army Safety.

Protection of the Environment (40 CFR); Labor (29 CFR); and AR 200-1 direct specific safety support for the 18 component areas of the environmental program. This support generally involves advising and assisting the organization(s) responsible for certain environmental programs by reviewing written procedures and requirements to ensure their adequacy, monitoring certain activities or functions to ensure regulatory compliance, providing training assistance to include developing and conducting required safety training, and investigating certain reported unsafe or unhealthful working conditions.

Limitations

This operational concept applies only to Army installations and Major Army Commands (MACOMs) located within the boundaries of the continental United States (CONUS). Both the environmental and safety programs are regulated by public law. In addition, the environmental programs are regulated by various state laws.

Operational Concept

Overall Objectives

This concept requires the establishment of an environmental safety program element at each MACOM and each major Army installation within CONUS. Within some MACOMs, such as the Reserve Components and the Army Material Command, the installation-level environmental safety program element could be consolidated at major subordinate command level and be responsible for several smaller installations or activities with a limited safety staff. The environmental safety program element will be staffed by safety and occupational health specialists who will be responsible for providing required safety support for some or all of the environmental programs listed in Table 1. The specific programs involved and the amount of support required will depend on the environment-related activities conducted at the installation or within the MACOM. Several of the environmental programs require more extensive safety support than others.

In providing the required safety support, the safety specialist (hereafter called the environmental safety specialist) performing the environmental safety program functions will be responsible for evaluating various installation-level environmental programs, plans, and procedures to ensure that they are in compliance with safety criteria in Army, State, and Federal regulations. The specific programs, plans, and procedures to be evaluated will depend on the actual environmental programs being conducted at the installation. Additionally, he/she will observe various functions and activities associated with the installation environmental programs to ensure that soldiers, Department of the Army (DA) civilians, and Army contractors are in compliance with

the requirements stipulated in the plans and procedures. The environmental safety specialist will also assist the organizations responsible for the various environmental programs in developing and conducting the specific safety training required by those programs and in investigating certain reported unsafe or unhealthful working conditions.

Table 1. Environmental Program Requiring Safety Function Support

<u>Major Support</u>	<u>Minor Support</u>
Hazardous Waste Management	Hazardous Waste Minimization
Solid Waste Management	Environmental Noise Abatement
Hazardous Materials Management	Pesticides & Pest Management
Oil and Hazardous Substance Spill Contingency Planning and Emergency Response	Environmental Restoration
Asbestos Management	Air Pollution & Ozone Depletion
	Historic & Archaeological Resources

Note: Support for one program may be included in other programs (i.e. pesticides are considered a hazardous material and would be included within the Hazardous Materials and Hazardous Waste Management Programs).

In providing the required safety support, the environmental safety specialist will interact with several organizations and agencies on the installation. Primarily, these include the Directorate for Engineering and Housing which has major responsibilities in the Solid Waste and Hazardous Waste Management Programs as well as the Hazardous Waste Minimization Program and the Asbestos Management Program and the Directorate for Logistics (DOL) which has major responsibilities in the Hazardous Materials Management Program and the Solid Waste and Hazardous Waste Management Programs. In addition, the environmental safety specialist will coordinate with the local medical activity or preventive medicine service, the Defense Reutilization and Marketing Office, the Civilian personnel Office, and any hazardous-waste-generating activities on the installation including those operated by contractors. In order to formalize these relationships, a memorandum of understanding (MOU) should be developed between these organizations and the safety office providing the support. An example of an MOU between the Occupational Safety and Health Administration (OSHA) and the Environmental Protection Agency (EPA) is located in appendix B.

An index of references for each environmental program listed in table 1 is contained in appendix C. These references provide

the environmental safety specialist an initial point of reference for each of the various functions within each environmental program for which he/she has responsibility. The list contains only Army and Federal regulations. There are many other supporting publications that are referenced. The Army regulations will generally refer to the federal regulations. Because the CFRs frequently cross-reference between environmental (40 CFR), transportation (49 CFR), labor (29 CFR), and other sections of the regulations, the environmental safety specialist will find it necessary to follow the reference path throughout the particular program he/she is working to ensure all the pertinent sections have been covered.

Evaluating Procedures and Requirements

The environmental safety specialist will review the installation's safety and health program to ensure the program identifies, evaluates, and controls safety and health hazards and provides for emergency response for hazardous waste operations. He/She will ensure that the written safety and health program includes an organizational structure, a comprehensive workplan, a site specific safety and health plan, a medical surveillance program, and standard operating procedures (SOP) for safety and health. The environmental safety specialist will ensure that procedures exist to inform everyone involved with the operation of the emergency response procedures and any potential fire, explosion, health, safety, or other hazard. He/she will ensure that the written program is made available to all soldiers, DA civilians, and contractors working the operation as well as OSHA personnel and any other government personnel with regulatory authority over the site. For example, EPA has authority over environmental sites, and they will be the lead agency at spills and cleanup sites.

In reviewing the safety and health program, the environmental safety specialist will ensure that the program establishes a chain of command and the responsibilities of supervisors and employees including a general supervisor and a site safety and health supervisor. He/she will ensure that the workplan addresses anticipated cleanup activities, work tasks and objectives, personnel requirements, and implementation of required training and medical surveillance.

In reviewing the site-specific safety and health plan, the environmental safety specialist will ensure that the plan addresses the hazards of each phase of the operation and includes requirements and procedures for employee protection. These requirements and procedures would include a hazard analysis for each site task, the required personal protective equipment (PPE)

for each employee, the medical surveillance requirements, and the frequency and types of air monitoring. He/she will also ensure that the plan provides for pre-entry briefings to be held before beginning any activity at the site.

The environmental safety specialist will evaluate installation procedures for site analysis and control. He/she will ensure that the procedures address hazard identification; site information including location, size, topography, and accessibility; duration of the planned activity; PPE requirements; monitoring; risk identification; and employee notification. Additionally, he/she will ensure that the site control program addresses site work zones, the use of the buddy system, site communications, emergency alerting, and identifies the nearest medical assistance.

In reviewing the training requirements, the environmental safety specialist will ensure that the procedures require all employees and supervisors receive training before they are allowed to engage in any type of hazardous waste operations. The training must include the names of persons responsible for site safety and health, safety and health hazards present at the site, use of PPE, work practices to eliminate risks from hazards, and medical surveillance requirements including recognizing signs and symptoms of overexposure. Additionally, the training program should cover decontamination procedures, confined-space-entry procedures, and spill-containment procedures.

In reviewing the procedures for the medical surveillance program, the environmental safety specialist will coordinate directly with the local medical authority to ensure that employees are covered by the program, the proper frequency of medical examinations and consultations, the medical examinations and consultations include the required medical and work histories, all medical exams are performed by a licensed physician, the proper information is provided to the attending physician, and that record keeping is performed within compliance standards.

In reviewing the PPE program, the environmental safety specialist will ensure that the PPE selected and used will protect employees from the hazards they are likely to encounter as identified during the site analysis. He/she will ensure the written program includes PPE selection, use and limitations, maintenance and storage, decontamination and disposal, proper fit, and inspection procedures.

In reviewing the decontamination procedures, the environmental safety specialist will ensure that procedures are developed and communicated to employees before anyone enters the site, SOPs are developed to minimize contact with hazardous substances, and all employees, equipment, and clothing are decontaminated prior to leaving a contaminated area.

In reviewing material-handling procedures, the environmental safety specialist will ensure that the procedures address the proper containers and drums be used; inspection criteria for the containers; special procedures relating to unlabeled containers; radioactive, laboratory, and shock-sensitive waste; and shipping and transport requirements.

In reviewing the emergency response plan, the environmental safety specialist will ensure the plan addresses pre-emergency planning and coordination with outside agencies, lines of authority, training and communications, emergency recognition, and safe distances and refuge. Also, he/she will review procedures dealing with control and security of the site, evacuation procedures and routes, decontamination, and emergency alerting and response procedures. Finally, the environmental safety specialist will review the procedures dealing with emergency medical treatment and first aid, PPE, emergency equipment, and response and followup critiques.

Treatment, Storage, and Disposal (TSD) Facilities

At those installations with TSD facilities, the environmental safety specialist will review the following programs to ensure that the appropriate procedures have been addressed: safety and health, hazard communications (HAZCOM), medical surveillance, decontamination, new technology, material handling, training, and emergency response. The HAZCOM program must meet the requirements of 29 CFR 1910.1200, Hazards Communications Program, while the remaining programs are governed by 29 CFR 1910.120, Hazardous Waste Operations and Emergency Response.

The environmental safety specialist will review the TSD facility's written analysis plan to ensure it addresses the parameters of the materials, the procedure used to test the parameters, and the sampling procedures. He/she will review the TSD inspection procedures to ensure that all monitoring, safety, emergency, operating, and structure equipment is properly scheduled. He/she will review the procedures used to control entry into the TSD facilities. The risk identification procedures will be reviewed for potential eye irritation sources, exposures exceeding the permissible exposure limits, and any conditions immediately dangerous to life or health. The procedures used to inform contractors and sub-contractors about site emergency response procedures, potential fire, explosion, safety, and health hazards will also be reviewed.

Monitoring Functions and Activities for Compliance

AR 200-1 requires the installation safety officer to monitor the storage, packaging, transportation, treatment, and disposal of waste and personnel training requirements to ensure compliance with Federal, State, and Army safety standards. In addition, AR 420-47,

Solid and Hazardous Waste Management, requires the installation safety officer to monitor the storage, packaging, and transportation of hazardous waste to ensure compliance with current safety standards. He/she is also required to serve as a member of the installation Hazardous Waste Management Board. The environmental safety specialist will perform these spot checks and inspections on the basis of review of the appropriate plans and procedures.

For example, he/she will observe the training provided to personnel involved with hazardous waste to ensure that the training includes hazard recognition, selection and use of PPE, special work practices, emergency response, and decontamination procedures. The environmental safety specialist will also observe operations at treatment, storage, and disposal sites to ensure that personnel are operating within the guidelines established in the installation plans and procedures for that operation. He/she will ensure that collection systems and equipment used in the Solid Waste Program are operated according to safety standards. Additionally, the environmental safety specialist will observe disposal operations to ensure that they are designed, operated, and maintained so as to protect the health and safety of operating personnel.

Developing and Conducting Safety-Related Training

Several of the environmental programs require support from the environmental safety specialist in developing and conducting specific safety-related training. For example, within the Hazardous Waste Management Program, the environmental safety specialist will assist in developing and conducting classes dealing with hazard recognition, selection and use of PPE, and certain work practices and control measures such as the "buddy" system. Training will also cover location of the written hazard communication program, the list of hazardous chemicals in the work area, the emergency response plan, the location and use of material safety data sheets, and methods to be used to detect the presence, or release, of hazardous chemicals. In addition, training will cover protective measures to be used in the workplace, PPE, evacuation procedures, and reporting unsafe chemical releases.

Within the Solid Waste Management Program, the environmental safety specialist will provide safety instructions to personnel involved with collection of solid waste which includes both general safety and hazardous materials safety. The training will include classes in basic safety instructions, equipment operations, methods of lifting/handling equipment, communications, and reporting of unsafe conditions.

For the Asbestos and Pesticides and Pest Management Programs, the environmental safety specialist will develop and provide safety training in the selection, use, maintenance, decontamination, and disposal of PPE.

Investigating Unsafe or Unhealthful Working Conditions

For the five major environmental programs which include the Hazardous Waste, Solid Waste, Hazardous Materials, and Asbestos Management Programs, and the Oil and Hazardous Substance Spill Contingency Planning and Emergency Response Program, the environmental safety specialist will ensure that procedures are established for personnel to report unsafe or unhealthful working conditions. These procedures will be in accordance with 29 CFR 1960.28 and 1960.46 and will be completed on DA Form 4755, Employee Report of Unsafe or Unhealthful Working Conditions. All reports will be investigated by the environmental safety specialist.

Other Safety Support

The environmental safety specialist will serve as a member of the installation Hazardous Waste Management Board, the Installation Compatible Use Zone Committee (ICUZ), or the Environmental Quality Control Committee (EQCC), and assist in budgeting for resources necessary to conduct safety activities.

MACOM Safety Support

Like his environmental counterpart, the environmental safety specialist at MACOM level will be involved in programming and budgeting for resources. He/she will also inspect and periodically review operations of hazardous and solid waste collection and disposal to ensure compliance with Army, State, and Federal Standards. The environmental safety specialist will provide oversight and technical assistance for design and implementation of installation waste minimization plans and programs, identify the Resource Conservation and Recovery Act compliance requirements for consideration during development of the command operating budget, and ensure timely submission of required reports. The MACOM representative will also issue instructions to his installations and activities for preparing and reviewing the Spill Prevention, Control and Countermeasures plan and the Installation Spill Contingency Plan. The MACOM representative will also review installation abatement plans at least annually to ensure adequate resource allocation and to ensure nonresource-intensive corrective actions are accomplished.

Resources Required

Resources required to accomplish safety support to the Army's environmental programs will vary, depending on the type and extent of environmental programs being conducted at the installation or within the MACOM. At installations with extensive environmental programs, a full man-year of effort would be required to provide the safety support. At installations with less active environmental programs, one-half to three-quarters of a man-year would probable suffice. The same estimations would be appropriate

for the MACOM environmental safety program element. Certain MACOMs such as the Army Material Command, National Guard Bureau, and Forces Command would require a full man-year of effort, whereas other MACOMs such as the Military District of Washington would require less support.

At both the installation and MACOM level, regardless of the number and extent of active environmental programs, the environmental safety program element functions should be performed by an experienced safety and occupational health professional (018 job series) trained in environmental-related issues. Grade levels would vary according to the organizational level to which he/she is assigned, the extent of active environmental programs underway, and the size of the safety staff to which he/she is assigned.

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APPENDIX A

ARMY ENVIRONMENTAL PROTECTION PROGRAMS

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1. Solid Waste Management
2. Hazardous Waste Management
3. Asbestos Management
4. Water Resource Management
5. Air Pollution and Ozone Depletion
6. Hazardous Material Management
7. Noise Abatement
8. Oil and Hazardous Substance Spill Contingency Planning and
Emergency Response
9. Environmental Restoration
10. Radon Reduction
11. Real Property Transactions
12. Underground Storage Tanks
13. Hazardous Waste Minimization
14. Research and Development
15. Pesticides and Pest Management
16. Fish and Wildlife Management
17. Forest Management
18. Historic and Archaeological Resources

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APPENDIX B

EXAMPLE OF A MEMORANDUM OF UNDERSTANDING

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MEMORANDUM OF UNDERSTANDING

Between the

**U.S. DEPARTMENT OF LABOR
Occupational Safety and Health Administration**

and the

**U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Enforcement**

I. Purpose

The purpose of this interagency Memorandum of Understanding (MOU) is to establish and improve the working relationship between the Office of Enforcement of the Environmental Protection Agency (EPA) and Occupational Safety and Health Administration (OSHA) of the Department of Labor. The goals of the agencies are to improve the combined efforts of the agencies to achieve protection of workers, the public, and the environment at facilities subject to EPA and OSHA jurisdiction; to delineate the general areas of responsibility of each agency; to provide guidelines for coordination of interface activities between the two agencies with the overall goal of identifying and minimizing environmental or workplace hazards.

This MOU establishes a process and framework for notification, consultation and coordination between EPA and OSHA to aid both agencies in identifying environmental and workplace health and safety problems and to more effectively implement enforcement of our national workplace and environmental statutes.

This MOU is intended to improve the information exchange relating to job-site safety and health, protection of the public health and environment thereby reducing the potential for work-place-related injury, death, and environmental contamination. This MOU implements OSHA's authority under the Occupational Safety and Health Act of 1970 (OSH Act) and EPA's general and statute-specific authorities to enter into agreements with other Federal agencies to further the legislative objectives of Congress and the President.

II. Background & Responsibilities

EPA and OSHA have the statutory responsibility to ensure the safety and health of the public and America's workforce through

the timely and effective implementation of a number of federal laws and implementing regulations. In some areas, the responsibilities of the agencies are separate and distinct. In others, they are complementary. EPA and OSHA wish to work together to maximize the efforts of both agencies to ensure the efficient and effective protection of workers, the public, and the environment.

A. EPA Responsibilities

EPA responsibilities include the protection of public health and the environment by assuring compliance with Federal environmental statutes and regulations. Agency functions are performed through standards setting and rulemaking, technical reviews, audits and studies, conduct of public hearings, issuance of permits and licenses, compliance inspections, investigations and enforcement, and evaluation of operating experience and research.

B. OSHA Responsibilities

OSHA is responsible for enforcing the OSH Act, 29 United States Code (U.S.C.) 651 et. seq. The goal of the OSH Act is to assure, so far as possible, every working man and woman in the nation safe and healthful working conditions. To achieve that purpose, the Act provides broad authority for a variety of activities and programs designed to reduce the number of occupational safety and health hazards at places of employment. Among these is the authority to promulgate mandatory safety and health standards for private sector workplaces and to conduct inspections of such workplaces to determine compliance with the Act and with OSHA standards. When violations are found, OSHA is authorized to issue citations to employers, propose penalties, and require abatement of hazards. In cases involving imminent dangers, OSHA is authorized to seek injunctive relief in U.S. District Court. In states which have elected to administer state occupational safety and health programs, or "state plans," the Act requires OSHA to conduct a continuing evaluation of state operations and, in certain circumstances, to provide a program if concurrent Federal OSHA enforcement.

C. Applicable Statutes

Under the OSH Act, 29 U.S.C. 651, every employer has a general duty, under section 5(a)(1), to furnish employment and a place of employment which is free from recognized hazards that are causing, or likely to cause, serious physical harm. Every

employer is also required, under section 5(a)(2), to comply with occupational safety and health standards promulgated by OSHA. In addition, employers must comply with regulations prescribed by OSHA under section 8 of the Act, which pertains to the conduct of workplace inspections among other things, and must furnish such records and other information as may be requested under section 24 of the Act.

Principal EPA laws include but are not limited to:

The Asbestos Hazard Emergency Response Act;
15 U.S.C. 2641; governing the removal of asbestos.

The Clean Air Act;
42 U.S.C. Sections 7401 to 7642; governing the release of air pollutants.

The Clean Water Act;
33 U.S.C. 1251 to 1387; governing the pre-treatment and release of pollutants to water.

The Comprehensive Environmental Response, Compensation and Liability Act;
42 U.S.C. Sections 9601 to 9675; governing the release of hazardous substances and the abatement of toxic and hazardous waste sites.

The Emergency Planning & Community Right-To-Know Act;
42 U.S.C. Sections 11001 to 11050; governing the storage, use and disposal of toxic and hazardous chemicals, including the reporting of accidental releases.

The Resource Conservation and Recovery Act;
42 U.S.C. Sections 6901 to 6992k; governing the storage and disposal of hazardous wastes.

A. COORDINATION

1. There will be the fullest possible cooperation and coordination between EPA and OSHA, at all organizational levels, in developing and carrying out training, data and information exchange, technical and professional assistance, referrals of alleged violations, and related matters concerning compliance and law enforcement activity to ensure the health and well-being of the nation's workforce, the general public, and the environment.

2. By January 1, 1991, and by the beginning of each

succeeding fiscal year, EPA and OSHA will develop an annual workplan to identify and define the priorities to be addressed during the year. This workplan will include an identification of specific types of facilities to be jointly addressed during the year.

3. EPA and OSHA will exchange names and telephone numbers of appropriate agency headquarters, regional and field personnel, including personnel in OSHA area offices, and in state program offices. All information will be kept up to date by both agencies. Each EPA and OSHA Regional Office will designate a point of contact for carrying out interface activities. Each agency agrees to prepare and distribute to all field personnel a suitable directive outlining a policy concerning the effective implementation of this MOU and to identify appropriate points of contact. In order to aid in the enforcement and issue-referral process, the agencies will update this information as the need arises and will ensure that managers and field personnel are provided with a copy of this MOU and the relevant directive.

4. Resolution of interagency policy issues concerning this MOU and specific areas of implementation will be coordinated between EPA's Office of Enforcement and OSHA's Directorate of Policy. Resolution of issues concerning inspection and enforcement activity involving both EPA and OSHA jurisdiction also will be coordinated by EPA's Office of Enforcement and OSHA's Directorate of Policy.

B. INSPECTIONS

1. EPA and OSHA may conduct joint inspections as necessary to carry out the legislative purposes of the respective statutory authorities. Such inspections may be in accordance with an annual workplan which is developed by the two agencies and identifies areas for joint initiatives. Such inspections may also be scheduled on an ad hoc basis such as in investigations following accidents or fatalities or injuries to workers resulting from reported activities or situations subject to either EPA or OSHA jurisdiction.

2. EPA and OSHA inspectors, in the course of conducting separate inspections, may discover situations involving potential violations of the other agency's laws or regulations. In those instances, referrals to the appropriate office will be undertaken as described below.

C. REFERRALS

1. For law enforcement purposes, OSHA and EPA shall develop a regular system to track and manage referrals of potential violations, allegations of violations, or situations requiring inspection, evaluation, or followup by either agency, as appropriate.

2. Although EPA does not conduct inspections for occupational safety, in the course of an EPA inspection, EPA personnel may identify safety concerns within the area of OSHA responsibility or may receive complaints about the safety or health of employees related to their working conditions. In such instances, EPA will bring the matter to the attention of OSHA-designated contacts in the Regional Office. EPA inspectors are not to perform the role of OSHA inspectors; however, they will refer worker health and safety issues to OSHA, pursuant to the procedures set forth in this MOU and implementing agency directives. In the case of worker complaints, EPA will disclose the name of individuals to OSHA but will not further disclose the name and the identity of the employee. When such instances occur within OSHA state-plan states' jurisdiction, the OSHA Regional Office will refer the matter to the state for appropriate action.

3. OSHA will inform the EPA Regional Administrator or appropriate EPA office of matters which appear to be subject to EPA jurisdiction when these come to their attention during Federal or state safety and health inspections or through worker complaints. Although not exhaustive, the following are examples of matters that would be reported to the EPA:

- a. Worker allegations of significant adverse reactions to a chemical or chemical substance which poses a potential hazard to public health or the environment.
- b. Accidental, unpermitted, or deliberate releases of chemicals or chemical substances beyond the workplace.
- c. Unsafe handling, storage, or use practices involving chemicals, chemical substances, or waste materials in apparent violation of EPA-administered laws.

- d. Other readily detectible potential violations of EPA-administered laws such as by-passing treatment systems.
 - e. Asbestos dispersal or contamination affecting the public or the environment.
4. EPA shall respond to referrals from OSHA, and OSHA shall respond to referrals from EPA, concerning potential violations of the other agency's requirements, when appropriate, by conducting investigations in a timely manner. Referrals shall be evaluated, and appropriate action will be taken.
5. OSHA will work to facilitate referrals of potential violations of EPA regulations to EPA and will encourage the relevant state agencies in those States which operate their own occupational safety and health programs (under a plan approved by OSHA under Section 18 of the OSH Act) also to make such referrals. EPA will work to facilitate referrals to OSHA or OSHA state-plan states of potential violations of occupational health and safety standards or regulations discovered by Federal or state environmental inspection activities.
6. EPA and OSHA will conduct periodic meetings, as necessary, to report on the progress of actions taken on the other agency's referrals and to evaluate the effectiveness of the referral system and operating procedures. Both agencies agree to establish a system to monitor the progress of actions taken on referrals.
7. OSHA will encourage state-plan states to respond to referrals from EPA and state agencies concerning potential violations of the states' occupational safety and health standards or regulations by conducting investigations in a timely manner. OSHA will further encourage state-plan states to participate in all training and information-sharing activities established under this MOU.

D. DATA EXCHANGE

EPA and OSHA agree to exchange information relating to complaints, inspections of investigations, violations discovered, imposition of civil monetary penalties, or other legal actions taken to enforce pertinent laws and regulations and all other information necessary to ensure effective and coordinated law enforcement. This MOU contemplates data exchange through both

hard copy and computer data bases in accordance with procedures to be established in a separate agreement.

E. TRAINING

EPA and OSHA will cooperate in developing and conducting periodic training programs for each other's personnel in the respective laws, regulations, and compliance requirements of each agency, as appropriate, to ensure that valid referrals are made when potential violations are found and to support joint enforcement and inspection initiatives. This MOU contemplates exchanges of appropriate training materials and information and development of specialized training activities in accordance with procedures to be established in a separate agreement.

IV. Period of Agreement

This MOU shall continue in effect unless modified in writing by mutual consent of both parties or terminated by either party upon 30 days' advance written notice to the other.

This MOU does not preclude either Agency from entering into separate agreements setting forth procedures for other special programs which can be addressed more efficiently and expeditiously by special agreement.

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APPENDIX C

REFERENCES

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Hazardous Waste Management

<u>Function</u>	<u>Reference</u>
General Safety	29 CFR 1910, Occupational Safety and Health Standards
Storage	AR 40-5, Preventive Medicine, Chapter 11-6: Hazardous Waste 40 CFR 264, Owner/Operator of Hazardous Waste Treatment, Storage, and Disposal Facility
Handling	AR 420-47, Solid and Hazardous Waste Management, Paragraph 6-8: Continuing Operations
Transporting	AR 200-1, Environmental Protection and Enhancement, Paragraph 6-4g: Transportation of Hazardous Waste AR 420-47, Solid and Hazardous Waste Management, Paragraph 6-11: Transportation of Hazardous Waste 40 CFR 263, Standards Applicable to Transporters of Hazardous Waste
Labeling	AR 200-1, Environmental Protection and Enhancement, Paragraph 6-4: Hazardous Waste Management 40 CFR 262.31, Labeling
Treatment	40 CFR 264, Owner/Operator of Hazardous Waste Treatment, Storage, and Disposal Facility
Disposal	AR 200-1, Environmental Protection and Enhancement, Paragraph 6-4f: Disposal of Hazardous Waste AR 420-47, Solid and Hazardous Waste Management, Chapter 6: Hazardous Waste Management 40 CFR 264, Owner/Operator of Hazardous Waste Treatment, Storage, and Disposal Facility

Risk Assessment	AR 385-10, Army Safety Program, Paragraph 3-9: Abatement Program
Reporting	AR 200-1, Environmental Protection and Enhancement, Paragraph 6-4c: Installation Hazardous Waste Inventory AR 420-47, Solid and Hazardous Waste Management, Paragraph 6-10: Identification of Hazardous Waste 40 CFR 262, Standards Applicable to Generators of Hazardous Waste
Protective Clothing and Equipment (PCE)	AR 385-10, Army Safety Program, Paragraph 2-2j: Operational Procedures AR 385-10, Army Safety Program, Chapter 6: PCE Program 29 CFR 1910, Subpart I, Personal Protective Equipment
Training	AR 385-10, Army Safety Program, Paragraph 2-2e: Operational Procedures 29 CFR 1910.120, Hazardous Waste Operations and Emergency Response (HAZWOPER) 29 CFR 1910.1200, Hazard Communication (HAZCOM) 29 CFR 1960 Subpart H, Training
Investigating	AR 385-10, Army Safety Program, Paragraph 4-4a: Army Employee Hazard Reporting 29 CFR 1960.28, Employee Reports of Unsafe or Unhealthful Working Conditions 29 CFR 1960.46, Agency Responsibility
Medical Surveillance	29 CFR 1910.120(b), Safety and Health Program 29 CFR 1910.20, Access to Employee Exposure and Medical Records AR 40-5, Preventive Medicine, Chapter 5: Occupational Health Program

Solid Waste Management

<u>Function</u>	<u>Reference</u>
General Safety	AR 385-10, Army Safety Program, Paragraph 2-2: Operational Procedures 29 CFR 1910, Occupational Safety and Health Standards
Storage	AR 420-47, Solid and Hazardous Waste Management, Chapter 3: Collection and Storage AR 200-1, Environmental Protection and Enhancement, Paragraph 6-12: Solid Waste Management Procedures 32 CFR 650, Subpart E, Solid Waste Management
Handling	AR 420 -47, Solid and Hazardous Waste Management, Chapter 3, Section II: Operation Requirements 32 CFR 650, Subpart E, Solid Waste Management
Packaging	AR 420-47, Solid and Hazardous Waste Management, Chapter 3, Section II: Operation Requirements 32 CFR 650, Subpart E, Solid Waste Management
Transporting	AR 200-1, Environmental Protection and Enhancement, Paragraph 1-27: DOL AR 420-47, Solid and Hazardous Waste Management, Chapter 3, Section II: Operation Requirements 32 CFR 650, Subpart E, Solid Waste Management
Treatment	AR 200-1, Environmental Protection and Enhancement, Paragraph 6-12: Solid Waste Management Procedures 32 CFR 650, Subpart E, Solid Waste Management

Disposal

AR 200-1, Environmental Protection and Enhancement, Paragraph 6-12: Solid Waste Management Procedures

AR 420-47, Solid and Hazardous Waste Management, Chapter 4: Thermal Processing and Land Disposal of Solid Waste (non-hazardous)

32 CFR 650, Subpart E, Solid Waste Management

40 CFR Subchapter 1, Solid Wastes

Risk Assessment

AR 385-10, Army Safety Program, Paragraph 3-9, Abatement Program

PCE

AR 385-10, Army Safety Program, Paragraph 2-2j: Operational Procedures

AR 385-10, Army Safety Program, Chapter 6: Protective Clothing and Equipment Program

29 CFR 1910, Subpart I, PPE

Reporting

AR 420-47, Solid and Hazardous Waste Management, Chapter 7: Monitoring and Records

AR 420-47, Solid and Hazardous Waste Management, Chapter 2, Section II: Solid Waste (non-hazardous) Responsibilities

32 CFR 650.112, Reports

Investigating

AR 385-10, Army Safety Program, Paragraph 4-4a: Army Employee Hazard Reporting

29 CFR 1960.28, Employee Reports of Unsafe or Unhealthful Working Conditions

29 CFR 1960.46, Agency Responsibility

Training

AR 420-47, Solid and Hazardous Waste Management, Paragraph 3-8: Collection Management

29 CFR 1960, Subpart H, Training

Hazardous Materials Management

<u>Function</u>	<u>Reference</u>
General Study	29 CFR 1910, Occupational Safety and Health Standards
Storage	AR 200-1, Environmental Protection and Enhancement, Chapter 5: Hazardous Materials Management Program
Handling	AR 200-1, Environmental Protection and Enhancement, Chapter 5-2: Hazardous Materials Management Program
Packaging	AR 200-1, Environmental Protection and Enhancement, Chapter 5: Hazardous Materials Management Program
Labeling	AR 200-1, Environmental Protection and Enhancement, Chapter 5-2: Hazardous Materials Management Program
Transporting	AR 200-1, Environmental Protection and Enhancement, Chapter 5-3: Management of Hazardous Materials
Disposal	AR 200-1, Environmental Protection and Enhancement, Chapter 5: Hazardous Materials Management Program
Risk Assessment	AR 395-10, Army Safety Program, Paragraph 3-9: Abatement Program
Reporting	AR 200-1, Environmental Protection and Enhancement, Chapter 5-2: Hazardous Materials Management Program
PCE	40 CFR 262, Standards Applicable to Generators of Hazardous Waste
	AR 200-1, Environmental Protection and Enhancement, Chapter 5-1e: Protection of Personnel
	AR 385-10, Army Safety Program, Chapter 6: Protective Clothing and Equipment Program
	29 CFR 1910, Subpart I, Personal Protective Equipment (PPE)

Training

AR 200-1, Environmental Protection and Enhancement, Chapter 5: Hazardous Materials Management Program

29 CFR 1910.120 HAZWOPER

29 CFR 1910.1200 HAZCOM

Medical Surveillance

29 CFR 1910.120(b), Safety and Health Program

29 CFR 1910.20, Access to Employee Exposure and Medical Records

AR 40-5, Preventive Medicine, Chapter 5: Occupational Health Program

Investigating

AR 385-10, Army Safety Program, Paragraph 3-9: Abatement Program

**Oil and Hazardous Substance Spill Contingency
Planning and Emergency Response**

<u>Function</u>	<u>Reference</u>
General Safety	29 CFR 1910, Occupational Safety and Health Standards 40 CFR Subchapter J, Superfund, Emergency Planning, and Right-to-Know Programs
Storage	AR 200-1, Environmental Protection and Enhancement, Paragraph 8-4: Spill Prevention, Control, and Countermeasure Plan 39 CFR 650, Subpart I, Oil and Hazardous Substance Spill Control and Contingency Plan 40 CFR 264, Owner/Operator of Hazardous Waste Treatment, Storage, and Disposal Facility 40 CFR 265, Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
Handling	AR 200-1, Environmental Protection and Enhancement, Paragraph 8-5: Installation Spill Contingency Plan 32 CFR 650-214, Minimum Plan Requirements
Packaging	AR 200-1, Environmental Protection and Enhancement, Paragraph 8-4: Spill Prevention Control, and Countermeasure Plan Guidance 32 CFR 650.212, Spill Prevention Control and Countermeasure Plan Guidance
Labeling	AR 200-1, Environmental Protection and Enhancement, Paragraph 6-4: Hazardous Waste Management 40 CFR 262.31, Labeling
Transporting	AR 200-1, Environmental Protection and Enhancement, Paragraph 6-4g: Transportation of Hazardous Waste

	AR 420-47, Solid and Hazardous Waste Management, Paragraph 6-11: Transportation of Hazardous Waste
	40 CFR 263, Standards Applicable to Transporters of Hazardous Waste
Disposal	AR 200-1, Environmental Protection and Enhancement, Paragraph 6-4f: Disposal of Hazardous Waste
	AR 420-47, Solid and Hazardous Waste Management, Chapter 6: Hazardous Waste Management
	40 CFR 264, Owner/Operator of Hazardous Waste Treatment, Storage, and Disposal Facility
Risk Assessment	AR 385-10, Army Safety Program, Paragraph 3-9: Abatement Program
Reporting	AR 200-1, Environmental Protection and Enhancement, Paragraph 8-4: Spill Prevention, Control, and Countermeasure Plan
	AR 420-47, Solid and Hazardous Waste Management, Paragraph 6-10: Identification of Hazardous Waste
	40 CFR 262, Standards Applicable to Generators of Hazardous Waste
PCE	AR 385-10, Army Safety Program, Paragraph 2-2j: Operational Procedures
	AR 385-10, Army Safety Program, Chapter 6: Protective Clothing and Equipment Program
	29 CFR 1910, Subpart I, Personal Protective Equipment (PPE)
Training	AR 200-1, Environmental Protection and Enhancement, Paragraph 8-5: Installation Spill Contingency Plan
	AR 385-10, Army Safety Program, Paragraph 2-2e: Operational Procedures
	29 CFR 1910.120 HAZWOPER

	29 CFR 1910.1200 HAZCOM
Medical Surveillance	29 CFR 1910.120(b), Safety and Health Program
	29 CFR 1910.20, Access to Employee Exposure and Medical Records
	AR 40-5, Preventive Medicine, Chapter 5: Occupational Health Program
Investigating	AR 385-10, Army Safety Program, Paragraph 4-4a: Army Employee Hazard Reporting
	29 CFR 1960.28, Employee Reports of Unsafe or Unhealthful Working Conditions
	29 CFR 1960.46 Agency Responsibility

Asbestos Management

<u>Function</u>	<u>Reference</u>
General Safety	29 CFR 1910, Occupational Safety and Health Standards
Storage	AR 200-1, Environmental Protection and Enhancement, Paragraph 10-1(b): Control Of Asbestos 29 CFR 1910.1001, Asbestos, Tremolite, Anthophyllite, and Actinolite
Handling	AR 200-1, Environmental Protection and Enhancement, Chapter 10: Asbestos Management Program 29 CFR 1910.1001, Asbestos, Tremolite, Anthophyllite, and Actinolite
Packaging	29 CFR 1910.1001(k) Housekeeping
Labeling	AR 200-1, Environmental Protection and Enhancement, Paragraph 6-4: Hazardous Waste Management 40 CFR 262.31, Labeling
Transporting	AR 200-1, Environmental Protection and Enhancement, Chapter 10: Asbestos Management Program AR 200-1, Environmental Protection and Enhancement, Paragraph 6-4g: Transportation of Hazardous Waste AR 420-47, Solid and Hazardous Waste Management, Paragraph 6-11: Transportation of Hazardous Waste 40 CFR 263, Standards Applicable to Transporters of Hazardous Waste
Treatment	AR 200-1, Environmental Protection and Enhancement, Paragraph 10-3: Installation Asbestos Management Plan 29 CFR 1910.1001, Asbestos, Tremolite, Anthophyllite, and Actinolite
Disposal	AR 200-1, Environmental Protection and Enhancement, Paragraph 10-2: Asbestos Management Program Requirements

	29 CFR 1910.1001(k)(6), Waste Disposal
Risk Assessment	AR 385.10, Army Safety Program, Paragraph 3-9: Abatement Program
	AR 200-1, Environmental Protection and Enhancement, Paragraph 10-2: Asbestos Management Program Requirements
Reporting	AR 200-1, Environmental Protection and Enhancement, Paragraph 10-2: Asbestos Management Program Requirements
	AR 420-47, Solid and Hazardous Waste Management, Paragraph 6-10: Identification of Hazardous Waste
	40 CFR 262, Standards Applicable to Generators of Hazardous Waste
PCE	AR 200-1, Environmental Protection and Enhancement, Paragraph 10-2: Asbestos Management Program Requirements.
	AR 40-5, Preventive Medicine, Section V: Personal Protective Equipment
	29 CFR 1910.1001(g)(h), Respiratory Protection, Protective Work Clothing and Equipment
Training	AR 200-1, Environmental Protection and Enhancement, Paragraph 10-3: Installation Asbestos Management Plan
	29 CFR 1910.1001(j): Communications of Hazards to Employees
Medical Surveillance	AR 40-5, Preventive Medicine, Section VI, Asbestos Monitoring
	29 CFR 1910.1001(L), Medical Surveillance
Investigating	AR 200-1 Environmental Protection and Enhancement, Paragraph 10-3: Installation Asbestos Management Plan
	AR 385-10, Army Safety Program, 4-4a: Army Employee Hazard Reporting

Hazardous Waste Minimization

<u>Function</u>	<u>Reference</u>
Material Substitution	AR 200-1, Environmental Protection and Enhancement, Paragraph 6-6: Waste Minimization
Identification of Hazardous Waste	AR 200-1, Environmental Protection and Enhancement, Paragraph 6-6d(2)(a):
Chemical	Identification AR 420-47, Solid and Hazardous Waste Management, Paragraph 6-10: Identification of Hazardous Waste
On-site Treatment	AR 200-1, Environmental Protection and Enhancement, Paragraph 6-6: Waste Minimization
Closed-Loop Recycling	AR 200-1, Environmental Protection and Enhancement, Paragraph 6-6: Waste Minimization AR 200-1, Environmental Protection and Enhancement, Paragraph 6-14: Recycling
Waste Segregation	AR 200-1, Environmental Protection and Enhancement, Paragraph 6-6: Waste Minimization
Inventories	AR 200-1, Environmental Protection and Enhancement, Paragraph 6-6(d): Audits, Inspections, or Surveys
Control Purchases	AR 200-1, Environmental Protection and Enhancement, Paragraph 6-6(d): Audits, Inspections, or Surveys
Employee Awareness Program	AR 200-1, Environmental Protection and Enhancement, Paragraph 6-6(d): Audits, Inspections, or Surveys

Environmental Noise Abatement

<u>Function</u>	<u>Reference</u>
General Study	29 CFR 1910, Occupational Safety and Health Standards
Administrative, Operational, and Engineering Controls	AR 200-1, Environmental Protection and Enhancement, Paragraph 7-2: Environmental Noise Abatement Program Requirements 32 CFR 650, Subpart G, Environmental Noise Abatement
Design and Location of Facility/Operation	AR 200-1, Environmental Protection and Enhancement, Paragraph 7-2: Environmental Noise Abatement Program Requirements 32 CFR 650, Subpart G, Environmental Noise Abatement
EQCC/ICUZ Membership	AR 200-1, Environmental Protection and Enhancement, Paragraphs 7-5(b) and 12-13: ICUZ Committee and Environmental Quality Control Committee
Noise Complaint Log	AR 200-1, Environmental Protection and Enhancement, Paragraph 7-3: Noise Complaints 40 CFR Subchapter G, Noise Abatement Programs

Pesticides and Pest Management

<u>Function</u>	<u>Reference</u>
General Safety	29 CFR 1910, Occupational Safety and Health Standards
Training	AR 200-1, Environmental Protection and Enhancement, Paragraph 5-5: Pest Management Program AR 40-5, Preventive Medicine, Paragraph 10-6: Training and Certification AR 420-76, Pest Management Program 40 CFR 171, Certification of Pesticide Applicators
Handling	AR 200-1, Environmental Protection and Enhancement, Paragraph 5-5: Pest Management Program AR 40-5, Preventive Medicine, Paragraph 10-4: Pesticides
PCE	AR 40-5, Preventive Medicine, Paragraph 5-25: Personal Protective Equipment AR 40-5, Preventive Medicine, Paragraph 10-14: Protective Clothing and Equipment 29 CFR 1910 Subpart I: Personal Protective Equipment
Medical Surveillance	AR 40-5, Preventive Medicine, Paragraph 10-15: Medical Surveillance
Risk Assessment	AR 385-10, Army Safety Program, Paragraph 3-9: Abatement Program
Disposal	AR 420-76, Pest Management Program 40 CFR Subchapter E, Pesticide Programs

Environmental Restoration

<u>Function</u>	<u>Reference</u>
General Safety	29 CFR 1910, Occupational Safety and Health Standards AR 200-1, Environmental Protection and Enhancement, Paragraph 9-2: Environmental Restoration Program Requirements
PCE	AR 200-1, Environmental Protection and Enhancement, Chapter 8: Environmental Restoration Program AR 385-10, Army Safety Program, Chapter 6: Protective Clothing and Equipment Program 29 CFR 1910, Subpart I, Personal Protective Equipment (PPE)
Risk Assessment	AR 385-10, Army Safety Program, Paragraph 3-9: Abatement Program

Air Pollution and Ozone Depletion

Function

Reference

General Safety

29 CFR 1910, Occupational Safety and Health Standards

Air Pollution
Emission Sources

AR 200-1, Environmental Protection and Enhancement, Paragraph 4-1: Air Pollution Abatement Program

40 CFR Subchapter C, Air Programs

32 CFR 650 Subpart D, Air Pollution Abatement

Historical and Archaeological Resources

Function

Reference

General Safety

29 CFR 1910, Occupational Safety and Health Standards

AR 200-1, Environmental Protection and Enhancement, Paragraph 12-14: Historic Preservation

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APPENDIX D

GLOSSARY

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Appendix D Glossary

AR	Army Regulation
CFR	Code of Federal Regulations
CONUS	Continental United States
DA	Department of the Army
DOL	Director for Logistics
EPA	Environmental Protection Agency
EQCC	Environmental Quality Control Committee
HAZCOM	Hazard Communication
HAZWOPER	Hazardous Waste Operations and Emergency Response
ICUZ	Installation Compatible Use Zone
MOU	Memorandum of Understanding
OSHA	Occupational Safety and Health Administration
OSH ACT	Occupational Safety and Health Act of 1970
PCE	Protective Clothing and Equipment
PPE	Personal Protective Equipment
SOP	Standard Operating Procedure
TSD	Treatment, Storage, and Disposal
U.S.C.	United States Code

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